



# Illinois Department of Transportation

## Memorandum

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To: ALL BRIDGE DESIGNERS 04.3  
From: Ralph E. Anderson *Ralph E. Anderson*  
Subject: BRIDGE PARAPET JOINT DETAILS  
Date: August 2, 2004

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The Illinois Department of Transportation and the Federal Highway Administration recently completed the 2003 FHWA/IDOT Joint Process Review on Bridge Parapet Construction. The purpose of the review was to evaluate the adequacy and long term performance of concrete bridge parapets. The review team identified uncontrolled vertical cracking in recently constructed bridges as a concern. This cracking is the result of a policy change in April 1999 which called for elimination of most vertical joints in the upper half of the parapet. As recommended by the review team, the Department has developed a policy to re-introduce closer spaced joints into our bridge parapets. See attachments.

A summary of the policy is as follows:

The maximum spacing of joints in the upper portion of bridge parapets is now limited to 20 feet. The spacing of joints in the base portion of parapets has not changed.

The joint material in the upper portion of the parapet has changed from aluminum sheet to cork filler. The joint material in the base portion of the parapet remains as aluminum sheet.

This policy shall apply to all projects with PDO approval dates after August 1, 2004. However, it is recommended that it be applied to all projects that have not yet been let. Designers of projects with specific parapet detailing guidelines such as the I-74 reconstruction in Peoria and the New Mississippi River Bridge project should consult with their District contact for guidance.

This policy also applies to all local agency projects using Federal or Motor Fuel Tax Funds, and is strongly recommended on projects using local funds.

If you have any questions regarding this policy, please contact Kevin Riechers at 217/782-9109.

Attach.  
KLR/ml1419/bb25943

## **Parapet Joint Detailing Policy Effective August 1, 2004**

### **Joint Locations near Interior Supports.**

Joints locations shall be as shown in Figure 3.2.4-3 of the Bridge Manual and Figure 1.4.8 of the Prestressed Concrete Manual. These joints shall be full height. The joint in the base of the parapet shall be  $\frac{1}{8}$ " aluminum sheet. The joint in the upper portion of the parapet shall be  $\frac{1}{2}$ " cork joint filler and sealed with caulk.

### **Joint Locations other than near a Support.**

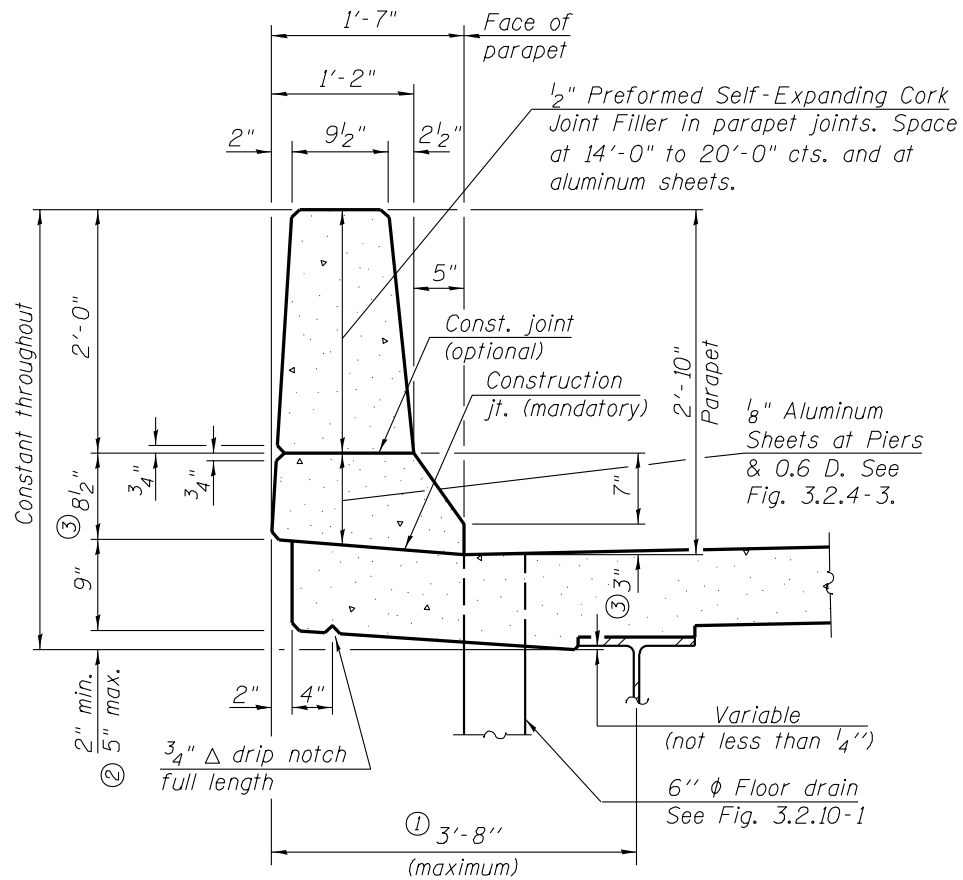
Joints shall be placed in the top portions of the parapets at 14'-0" to 20'-0" intervals. The joint shall be  $\frac{1}{2}$ " cork joint filler and sealed with caulk. The joints shall be placed as uniformly and symmetrically within a span as possible and no reinforcement, conduit, etc. shall pass through these joints.

See revised Bridge Manual Figures 3.2.4-1, 3.2.4-3, and 3.2.4-4.

See revised Prestressed Concrete Manual Figure 1.4.8.

See new Parapet Joint Detail. This detail is available in the cell library detailib,cel with the name PARJNT. All affected base sheets have been revised to reflect this new policy. They are available for download from the IDOT website.

Notes: All edges shall have  $\frac{3}{4}$ " chamfer.



- ① When superstructure is curved and stringers are straight, the minimum allowable overhang is 1'-3". Actual maximum and minimum dimensions are to be shown on plans. See Prestressed Concrete Manual for limitations with Bulb-T's.
- ② When more than 5" is required add excess to 9" dimension.
- ③ Add 2" when initial Waterproofing Membrane System and Wearing Surface is used.

**F SHAPE  
CONCRETE PARAPET  
CONFIGURATION**

Figure 3.2.4-1

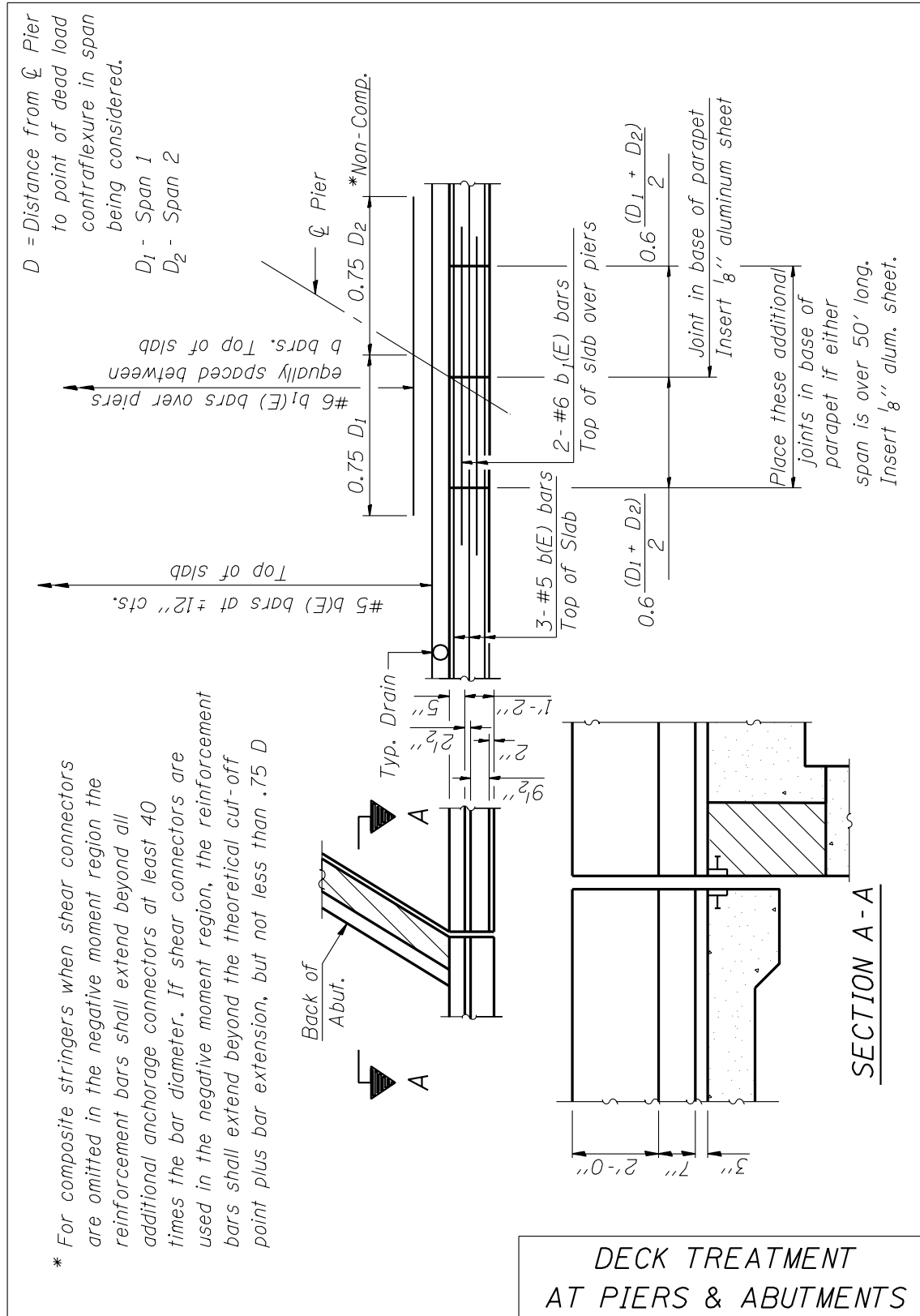
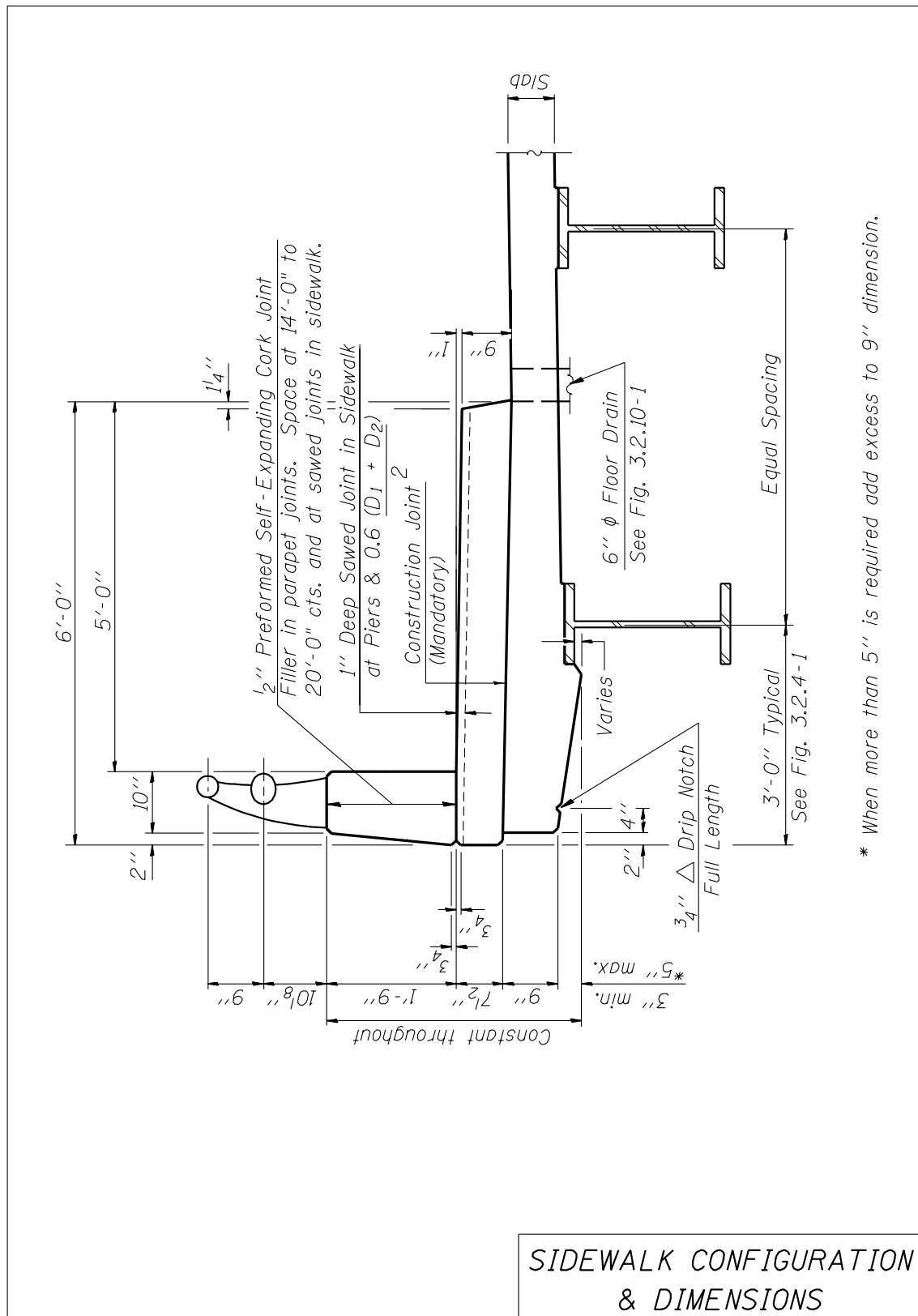


Figure 3.2.4-3



\* When more than 5" is required add excess to 9" dimension.

Figure 3.2.4-4

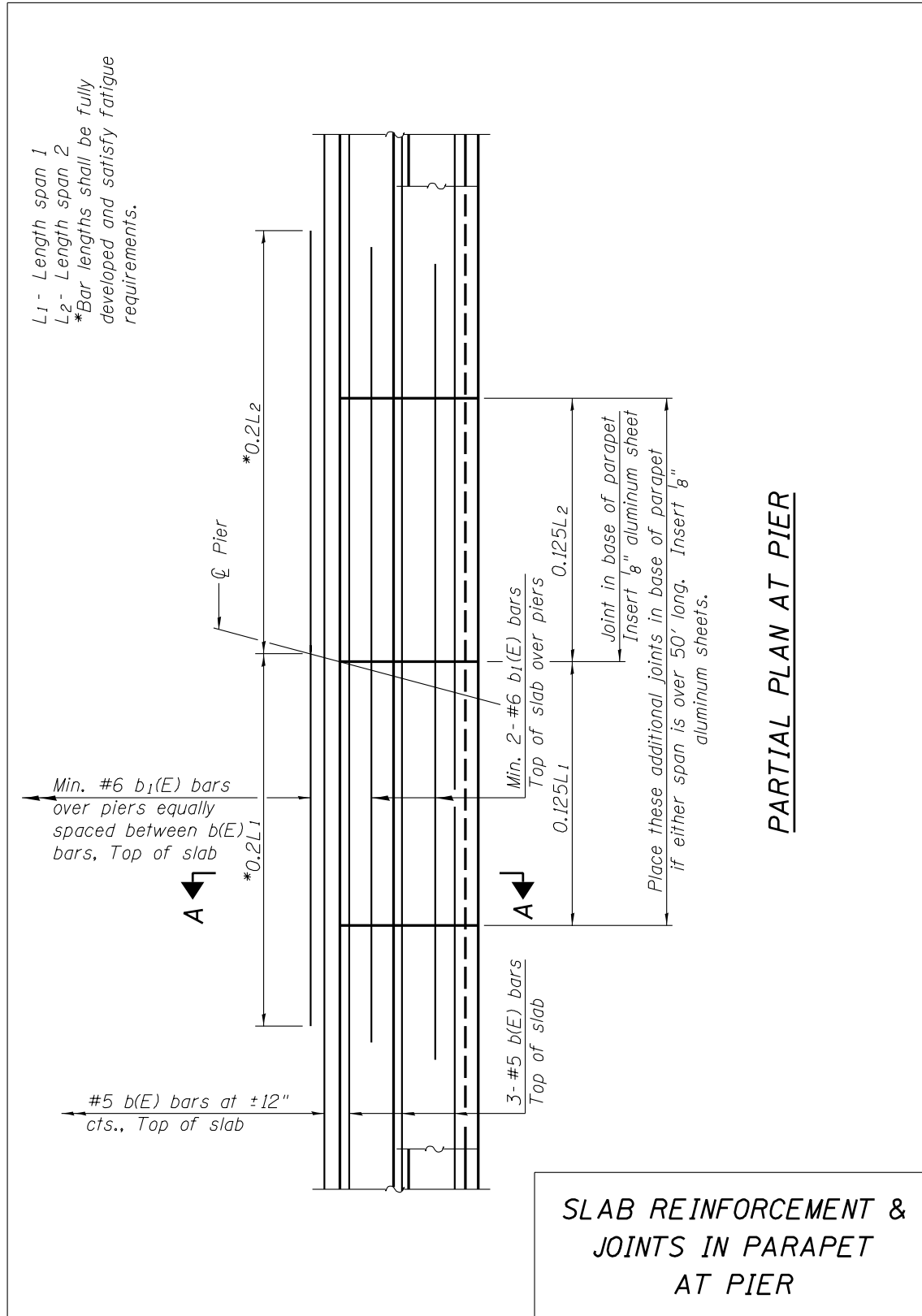
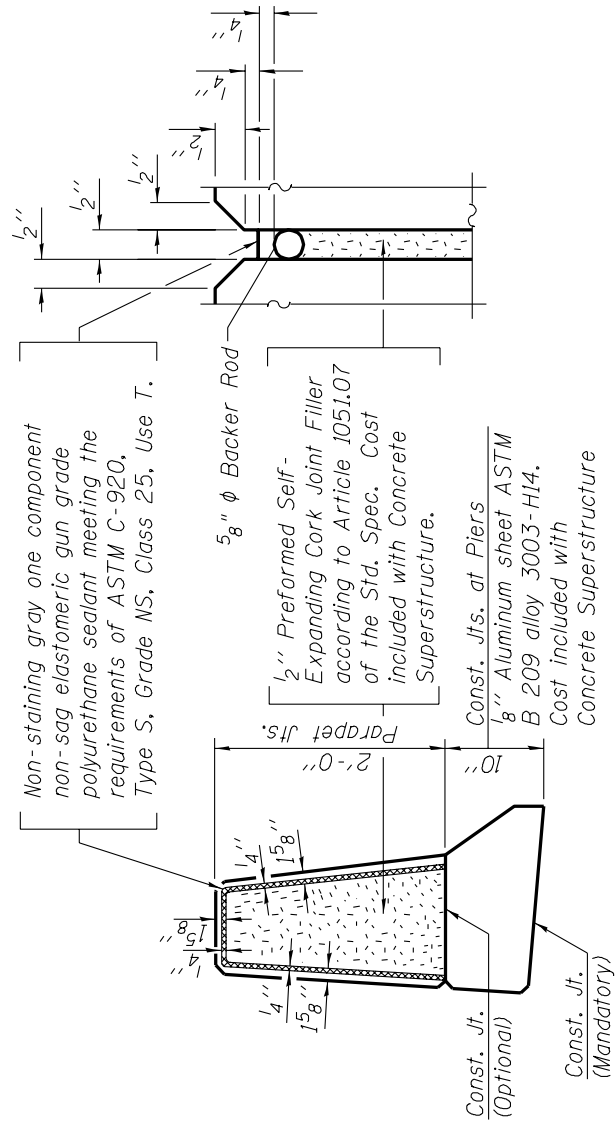


Figure 1.4.8



PARAPET JOINT  
DETAIL